CHAPTER 15H

FIRE PROTECTION SYSTEMS

15H-01 GENERAL

a. Definition

This chapter covers materials, equipment, and good workmanship practices for Fire Protection Systems.

b. Approvals

(1) Review Eng Form 4288, Submittal Register, and insure that all material equipment, and shop drawings are approved prior to preparatory inspection, and prior to either fabrication or installation. Obtain any helpful manufacturer*s installation information.

(2) Insure that seismic restraints are shown on shop drawings.

c. Storage and Handling

(1) Insure that all materials and equipment are handled carefully to prevent damage.

(a) Reject damaged material and equipment. Have such items removed from the site.

(b) Have damaged coatings repaired.

(2) In handling heavy pipe use wide belt slings to avoid damage to pipe coatings.

(3) Check storage facilities for adequate weather protection, possible damage, and safety hazard.

(4) When outside storage is necessary, store materials and equipment above ground.

d. Coordination of Work

Continually check for interferences between electrical, mechanical, architectural, and structural features especially in ceiling area and along walls where fire protection system is to be installed.

15H-02 SPRINKLER SYSTEMS

a. General

(1) Assure that fire protection systems serving occupied buildings are not shut off for repairs without advance notice being given to proper authorities.

(2) Note valves and equipment proposed for location within reach of flood waters. Call to the attention of your supervisor.

(3) Do not take water from fire mains for domestic use.

(4) Identify painting and coding requirements.

(5) Check that sprinkler heads are not painted.

b. Materials

(1) Coordinate fire department hose connections for use with local fire department hose.

(2) Inspect pipe, fittings, and valves. Pipe that is properly reamed is free from burrs and fins.

c. Water Supply

(1) Evaluate plan of work to minimize interruption of water service.

(2) Insure that water line is located below local frost line.

(3) Block off ends of supply lines terminating in building or valve house.

(4) Be certain that pipe joints are left exposed until final inspection and tests are made.

(5) See that turns in supply line are braced, blocked or clamped.

d. Aboveground Piping

(1) Notice size of pipe. Check to insure all hangers are tight.

(a) Run parallel to building lines, with slope to drain.

(b) See that branch piping is off top of main.

(c) Where impossible to obtain an even slope, plugs should be provided at low points so that the entire system may be drained. Check for inspection test connections required by NFPA.

(2) See that no cutting of structural members for support or passage of pipe is allowed.

(3) Insure that holes through fire walls are provided with sleeves and plates. Sleeves will be provided where pipe passes through walls and floors.

(4) Check that installation of seismic restraints are installed as approved.

e. Sprinkler Heads

(1) Be sure that heads in accordance with NFPA 13 are installed in upright position with recommended clearance to roof or ceiling surfaces.

(a) When in pendant position return bends will be used if water is subject to sedimentation.

(b) Where subject to mechanical injury heads will be provided with approved guards.

(c) All heads will be new and should not be painted.

(2) Determine sprinkler head temperature ratings as proper for ambient temperatures anticipated in the area; e.g., near heaters, skylights, etc.

Notify your supervisor in instances where sprinkler head temperature ratings appear to be inconsistent with anticipated ambient temperatures.

(3) Spare heads should be provided and arrangements made to transfer them to the using service.

(4) Where sprinkler heads are shown to be installed in special hazard areas, such as electronic shops, confirm that installation will be in conformance with area usage.

f. Drains

See that valves or plugs are provided to insure drainage of the entire system. Assure that discharger from all drain valves is visible. They should be arranged so that wide open valve position under normal pressure will not cause any water damage.

g. Wet Pipe Systems

(l) Insist that piping layout is in strict accordance with approved drawings.

(2) Alarm check-valve assembly must conform with connection diagram.

(3) Observe installation of water—flow indicators for conformance with connection diagram.

(4) Confirm insulation and painting requirements.

(5) Check water flow alarm signal by using wet pipe type of inspector*s test connection.

h. Dry Pipe Systems

(1) Determine that piping layout is in strict accordance with approved drawings.

(2) Note dry pipe valve installation for conformance with connection diagram.

(3) Inspect installation of air compressors. Air supply line should include flexible connection and orifice plate. Check motor controller operation. If compressor is equipped with an air storage tank, assure that condensate water drain is provided at bottom of tank.

(4) Examine locations and operation of condensate chambers; i.e., drum drips.

(5) Check water flow alarm signal time and dry valve trip test time by using the dry pipe type of inspector*s test connection.

(6) Where dry pipe valve accelerators are provided, check for proper operation.

i. Deluge Systems

(1) Confirm that piping layout is in strict accordance with approved drawings.

(2) Examine installation of deluge valve assembly.

(3) Inspect and test releasing devices.

(4) Check tripping devices both manual and automatic. Check provisions to insure against accidental water damage.

(5) Insure that contractor provided portable test units in good working order.

j. Sterilization

Witness dosage, distribution, retention, and final flush-out.

k. Alarm Facilities

(1) Check installations to insure that all alarm devices have been provided and are in operating condition.

(2) Be sure that electric power for alarm signals is taken from the house current supply line ahead of the main switch.

(3) Examine alarm system for tie-in with local fire department.

(4) Check alarm to insure that it can be heard above normal noise levels.

l. Testing

(1) Review test procedure for adequacy, and witness all tests.

(2) Protect dry pipe valves against damage during the tests.

(3) In testing extensions to existing system, insure that self-indicating blanks are used. Remove upon completion of tests.

(4) Insure that all sprinkler contractor*s certificates covering materials and tests are properly executed.

(5) Insure that flushing and hydrostatic tests are made in accordance with the accepted tests specified in Standard 13 of the National Fire Protection Association.

(6) Insure that all lines and controls are properly painted, color coded, indentified, tagged, and with directional flow markings.

(7) Check with supervisor to assure user/fire marshall is present as needed durin the test.

15H-03 PIPING. INSULATION. AND INTERIOR ELECTRICAL

See Section 15A PIPING SYSTEMS, Section 15C MECHANICAL INSULATION, and Section 16A INTERIOR ELECTRICAL.